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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,076	12/16/1999	BRIAN CRUICKSHANK	91436-209	7105

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EXAMINER

HAN, QI

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 07/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/464,076	CRUICKSHANK, BRIAN <i>BL</i>
Examiner	Art Unit	
Qi Han	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Specification and Drawings

1. The disclosure is objected to because of the following informalities:
 - a) The number "208" (in page 5, lines 25 and 27, and page 11, line 4) has no antecedent reference in Fig 2. Similarly, in the drawing, the box "210" in Fig. 2 has no explanation in the specification. It appears that the box "210" should be "208". Appropriate correction is required.
 - b) Changing phrase "text to speech engine (or system)" (for example on page 1, line 11 and line 20) to "text-to-speech engine (or system)" in the application would be necessary for the purpose of clear specification. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Sharman.

Regarding **claim 6**, Sharman discloses a text to speech system. Sharman further discloses a linguistic processor for various linguistic processes comprising: text tokenisation preprocessing 310 (Fig. 3) to split input text into tokens (words), word conversion 315 to implement special rules to map lexical items into canonical word form, such as convert numbers to word strings and expand acronyms and abbreviations, syllabification 320 to look up and match the words using a dictionary and to remove any possible prefix or suffix for a word and to break a word down into constituent syllables –syllabified word (equivalent to list of textual unit) for

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further processing, which corresponds to the claimed “a method of pre-processing a text file comprising: receiving a text file; parsing said text file into textual units, where each said parsed textual unit is one of a word, a prefix or a suffix; and for each one of said parsed textual units, if said one of said parsed textual units corresponds to a stored textual unit in a vocabulary of textual units, adding said stored textual unit to a list.”

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharman in view of well known prior art (MPEP 2144.03).

Regarding claim 7, Sharman discloses everything claimed, as applied above (see claim 6). Sharman particularly discloses that it is useful to include some back-up mechanism to be able to process words that are not in the dictionary (column 5, line 26). But, Sharman fails to explicitly disclose to mark a text unit that does not match the one either in dictionary or by rule sets. However, the examiner takes official notice of the fact that it was well known in the art to mark a text unit for further processing.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Sharman by specifically marking a text unit of the processed data for the purpose of clear indication for next step processing.

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Regarding **claim 8**, Sharman and well known prior art disclose everything claimed, as applied above (see claim 7). But, Sharman fails to disclose to mark the text unit with a pre-pending character. However, the examiner takes official notice of the fact that it was well known in the art to mark the text unit by using a pre-pending character.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Sharman by specifically providing a pre-pending character for marking the textual unit for the purpose of flexibility of future expanding.

4. Claims 1-5 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharman et al (USPN 5,774,854) in view of Busardo (USPN 6,148,285).

Regarding **claim 1**, Sharman discloses a text to speech system comprises:

- a) a component 320 (Fig. 3) providing a dictionary look-up to break words down into syllables (list) by removing any possible prefix or suffix (column 5, lines 22-27), which corresponds to the claimed “receiving a list of textual units, where each said textual unit is one of a word, a prefix or a suffix;”
- b) components 325,330 and 335 performing phonetic transcription in which the syllabified word is broken down still further into its constituent phonemes, again using a dictionary look-up table (column 5, lines 30-33), and an acoustic processor 220 (Figs. 2 and 4) preparing acoustic data by using diphone library 420 (Fig.4), which corresponds to the claimed “locating an associated speech sample in a memory;” and
- c) output buffer 590 (Fig. 5) storing result of processing and checking output data sufficiency, which corresponds to the claimed “pending said associated speech sample to an output signal.”

But, Sharman fails to explicitly disclose utilizing “speech sample” for the phonetic data on item

b) above, even though he cites that a diphone library 420 (Fig. 4) effectively contains prerecorded segments of diphones (column 6, line 25). However, the examiner contends that the concept of using speech sample as phonetic data was well known, as taught by Busardo.

In the same field of endeavor, Busardo discloses an allophonic text-to-speech generator in which a voice talent (equivalent to speech sample) records a number of words or phrases that include all of the audio allophones that correspond to the allophonic text characters for the purpose of generating a phonetic transcription of the word (column 2, lines 28-38).

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Sharman by specifically providing a voice talent (speech sample) for generating phoneme data and diphone data, as taught by Busardo, for the purpose of producing better sound and speeding up operation.

Regarding **claim 2**, Sharman and Busardo disclose everything claimed, as applied above (see claim 1). Sharman further suggests that: (i) at substring level, it is useful to include some back-up mechanism to be able to process words that are not in the dictionary (column 5, line 24); (ii) at phoneme level, it is again using a dictionary look-up table, augmented with general purpose rules for words not in the dictionary (column 5, line 34); which is equivalent to use “secondary text-to-speech engine”. Further more, Sharman discloses that the phoneme data and other portion of data are sent to acoustic processor to produce output data stored in the output buffer (Fig. 5). This corresponds to the claimed “wherein one said textual unit in said list is indicated as not having an associated speech sample in memory and said method further comprises: passing said indicated textual unit to a secondary text to speech engine; receiving a

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speech sample converted from said indicated textual unit from said secondary text to speech engine; and appending said converted speech sample to said output signal.”

Regarding **claim 3**, Sharman and Busardo disclose everything claimed, as applied above (see claim 2). But, Sharman fails to explicitly disclose to provide a secondary text-to-speech engine which comprises a phonetic text-to-speech engine based on a voice talent. However, the examiner contends that the concept of utilizing a phonetic text-to-speech engine based on a voice talent was well known, as taught by Busardo.

Busardo further discloses that a voice talent records a number of words or phrases that include all of the audio allophones that correspond to the allophonic text characters for the purpose of generating a phonetic transcription of the word (column 2, lines 28-38).

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Sharman by specifically providing a phonetic text-to-speech engine based on a voice talent as secondary text-to-speech engine, as taught by Busardo, for the purpose of offering consistent sound with the primary text-to-speech engine.

Regarding **claim 4**, Sharman and Busardo disclose everything claimed, as applied above (see claim 1). Sharman also discloses that processing input text at the substring level is based on a syllabified word (column 5, line 31), which inherently satisfies all limitation elements as claimed “wherein a consecutive plurality of said textual units in said list represent a whole word, said method further comprising: for each textual unit in said consecutive plurality of said textual units, locating an associated speech sample in said memory; creating a speech unit by splicing together said plurality of associated speech samples; and appending said speech unit to said output signal.”

Regarding **claim 5**, Sharman and Busardo disclose everything claimed, as applied above (see claim 4). Sharman further discloses components of identifying diphones 410 (Fig. 4), diphone library 420 and diphone concatenation 415 for overcoming audible discontinuities (column 6, lines 34-40), which corresponds to the claimed “after said splicing, processing said speech unit to remove discontinuities.”

Regarding **claim 9**, it discloses an apparatus, which corresponds to the method of claim 1; the apparatus is obvious in that it simply provides structure for the functionality found in claim 1.

Regarding **claim 10**, it discloses an apparatus, which corresponds to the method of claim 1; the apparatus is obvious in that it simply provides structure for the functionality found in claim 1. In addition, Sharman specifically discloses that the TTS system includes two microprocessors (column 3, line 17), which corresponds to the claimed “a text to speech converter comprising a processor operable to ...”.

Regarding **claim 11**, it discloses an apparatus, which corresponds to the method of claim 1; the apparatus is obvious in that it simply provides structure for the functionality found in claim 1. In addition, Sharman specifically discloses that an arrangement is particularly suitable for a workstation (equivalent to computer) equipped with an adapter card with its own DSP (equivalent to processor) (column 3, line 21), which corresponds to the claimed “a computer readable medium for providing program control to a processor, said processor included in a text to speech converter, said computer readable medium adapting said processor to be operable to ...”.

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Regarding **claim 12**, it discloses an apparatus, which corresponds to a combination of the method of claim 1 and the method of claim 6; the apparatus is obvious in that it simply provides structure for the functionality found in claim 1 and claim 6.

Regarding **claim 13**, it discloses a computer data signal in a carrier wave, which is used in and corresponds to the method of claim 1; the signal is obvious in that it simply provides transition means for the functionality found in claim 1.

Regarding **claim 14**, it discloses a data structure, which is used in and corresponds to the method of claim 1; the data structure is obvious in that it simply provides a part of software structure for the functionality found in claim 1.

Conclusion

5. Any response to this office action should be mailed to:
Commissioner of Patents and Trademarks, Washington D.C. 20231
or faxed to:
(703)-872-9314
Hand-delivered responses should be brought to:
Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. and Friday from 8:00 a.m. to 12:00 a.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached on (703) 305-4379.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Marsha D. Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

QH/qh
July 10, 2002